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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/594,205	06/14/2000	Jonathan Huie	SIA-P008	8285

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EXAMINER
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DELGADO, MICHAEL A

ART UNIT	PAPER NUMBER
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2144

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/594,205

Applicant(s)

HUIE ET AL.

Examiner

Michael S. A. Delgado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/04/2004 has been entered.

### ***Response to Arguments***

1. Applicant's arguments filed 10/04/2004 have been fully considered but they are not persuasive. In response to argument as to the use of a key and pointer to accomplished the claimed function. It is well known in the art that keys and pointers are the objects of choice when mapping network address. This will be made evident by the office action that follows.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig 2, does not show 60. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the

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immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Page 10 of specification teaches about deriving a value of 16 from a 4-bit value. There is no evidence in the specification to support this. A 4 bit as known in the art can only give a value between 0 and 15.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,460,120 by Bass et al.

In claim 1, Bass teaches about a high performance network address processor comprising (Fig 1):

a longest prefix match lookup engine for receiving a network address request having a designated network destination address (Col 7, line 60-Col 8, line 15); and  
an associated data engine "Data Store Coprocessor" coupled to the longest prefix match lookup engine "Tree Search Engine Coprocessor" that is capable of receiving a key and an output address pointer "forwarding information" from the longest prefix match lookup engine and that is capable of providing a network address processor "protocol processor" data output corresponding to the designated network address pointer (The leaf contains destination address) (Col 7, line 60-Col 8, line 15), (Col 8, line 65-Col 9, line 10) (Col 25, lines 35-50) (Col 27, lines 1-10).

In claim 2, Bass teaches about a high performance network address processor of claim 1 wherein the longest prefix match lookup engine comprises a plurality of pipelined lookup tables (Col 20, line 65-Col 21, line 5).

In claim 3, Bass teaches about a high performance network address processor of claim 1 wherein the network address processor is configurable to a variety of destination address width (Col 7, line 60-Col 8, line 15).

In claim 4, Bass teaches about a high performance network address processor of claim 1 wherein the network address processor generates a network address data output in one clock cycle (Col 30, lines 45-65).

In claim 5, Bass teaches about a high performance network address processor integrated circuit, wherein the network address processor integrated circuit comprises (Fig 1):

a longest prefix match lookup engine “Tree Search Engine Coprocessor” for receiving a network address request having a designated network destination address (Col 7, line 60-Col 8, line 15); and

an associated data engine “Data Store Coprocessor” coupled to the longest prefix match lookup engine “Tree Search Engine Coprocessor” that is capable of receiving a key and an output address pointer “forwarding information” from longest prefix match lookup engine and that is capable of providing a network address processor “protocol processor” data output corresponding to the designated network address pointer (Col 7, line 60-Col 8, line 15), (Col 8, line 65-Col 9, line 10) (Col 25, lines 35-50) (Col 27, lines 1-10).

In claim 6, Bass teaches about a high performance network address processor of claim 5 wherein the longest prefix match lookup engine comprises a plurality of pipelined lookup tables (Col 20, line 65-Col 21, line 5).

In claim 7, Bass teaches about a high performance network address processor of claim 2 wherein the plurality of pipelined lookup tables is implemented in a DRAM (Col 7, line 60-Col 8, line 15), (Col 9, lines 45-55).

In claim 8, Bass teaches about a high performance network addressing method comprising the steps of (Fig 1):

providing a longest prefix match lookup engine “Tree Search Engine Coprocessor” with a network address data request and a destination network address, wherein the longest prefix match lookup engine comprises a set of lookup tables (Col 7, line 60-Col 8, line 15), (Col 20, line 65-Col 21, line 5);

searching the set of lookup tables to select a look up engine address output from the set of lookup tables to provide to an associated data engine “protocol processor” (Col 7, line 60-Col 8, line 15); and

searching the associated data engine “Data Store Coprocessor” to provide an associated destination address data output (Col 7, line 60-Col 8, line 25).

In claim 9, Bass teaches about a high performance network addressing method of claim 8 wherein the step of searching the set of lookup tables comprises searching for an entry of the set of lookup tables that comprises the smallest entry that is greater than or equal to an input search key, the step of searching for the smallest entry comprising the steps of (Col 7, line 60-Col 8, line 15):

selecting the smallest entry that equals the input search key with a corresponding number of mask bits, wherein if one or more entries comprise the same key, the key having the smallest mask is selected (Col 25, line 45-Col 26, line 5); and

wherein if no key matches the above requirements, the maximum key in a row is compared with the input search key using each of a set of mask pointer pairs, each of the pointer is selected to correspond to the smallest mask for which the input search key

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equals the maximum key in the row with the corresponding number of mask bits ignored (Col 25, line 45-Col 26, line 5).

***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent No. 6,539,369 by Brown, teaches about a method and apparatus for storing sparse and dense subtrees in a longest prefix match lookup table.

US patent No. 6,460,112 by Srinivasan et al, teaches about a method and apparatus for determining a longest prefix match in a content addressable memory device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. A. Delgado whose telephone number is (571) 272-3926. The examiner can normally be reached on 7.30 AM - 5.30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM A CUCHLINSKI JR can be reached on (571) 272-3925

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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